



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,409	08/19/2003	Ronald Reginald Burgess	M03A201	3444

7590 11/04/2005

Ira Lee Zebrak
The BOC Group, Inc.
Legal Services - Intellectual Property
100 Mountain Avenue
Murray Hill, NJ 07974

EXAMINER

EL ARINI, ZEINAB

ART UNIT	PAPER NUMBER
----------	--------------

1746

DATE MAILED: 11/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,409

Applicant(s)

BURGESS ET AL.

Examiner

Zeinab E. EL-Arini

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 22-28, 34-36, 42-48 and 55-57 is/are rejected.
- 7) ☒ Claim(s) 12-21, 29-33, 37-41, 49-54, and 58-62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

The amendment and remarks filed 9/1/05 have been acknowledged and entered.

Claim Rejections - 35 USC § 112

The rejection under 35 U.S.C. 112, second paragraph stated in paper No.062005 has been withdrawn in view of applicants' amendment.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-11, 22-28, 34-36, 42-48 and 55-57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weldon et al. (US 2003/0116276 A1) in combination with Tan (6,810,887).

Weldon et al. disclose a method for removing a metallic layer formed from at least one metal from the surface of a ceramic substrate. The method comprises the step of immersing the ceramic substrate coated with metallic layer in an acid solution comprising 37% hydrochloric acid for a time to substantially remove the metallic layer therefrom. See paragraphs 7, 31-34, and 54. The references disclose the metallic layer comprises an aluminum coating and a tantalum overlaying the aluminum coating. See paragraphs 54-55. The reference also discloses the step of annealing the ceramic substrate at an elevated temperature after the immersing step. See paragraphs 44, 54.

Art Unit: 1746

The limitation of claims 6-7, 28, 36, 48, and 57 are disclosed on page 4, paragraph 44.

The reference discloses the immersion time as claimed, see paragraphs 31-34, 44, and 54.

Weldon et al. do not teach the acid concentration is about 31%, and the ratio between water, nitric acid, and hydrofluoric acid, the drying time and temperature as claimed.

Tan discloses a method for cleaning semiconductor fabrication equipment parts. The reference discloses typically, in the prior art, relatively high concentrations of acids and other cleaning agents were used to clean parts. For example, a typical acid bath for quartz cleaning would include 1 part HF, 1 part HNO₃, and 1 part H₂O. See col. 2, lines 20-23.

It would have been obvious at the time applicants invented the claimed process to adjust the concentration of the HCL to obtain optimum results. It would have been obvious for one skilled in the art to use the acids ratio as taught by Tan in the Weldon et al. process to obtain the claimed process, and because it is well known in the art to use acids ratio as claimed. See Tan, col. 2, lines 20-23. It would have been obvious for one skilled in the art to use the drying step, and adjust the drying temperature and time to improve the cleaning process.

This rejection stated in paper No. 062005 is maintained.

Allowable Subject Matter

3. Claims 12-21, 29-33, 37-41, 49-54, and 58-62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record failed to teach the ramping step comprises heating to a first temperature -----; maintaining the first temperature for about an hour; heating to a second temperature-----; heating to a third temperature-----; maintaining the third temperature-----; and allowing to cool to a forth temperature-----, as is now claimed.

Response to Arguments

5. Applicant's arguments filed 09/01/05 have been fully considered but they are not persuasive. Applicants' argument with respect to Weldon et al. and Tan do not teach the concentration of the HCL as claimed, is not persuasive, because one skilled in the art would adjust the concentration to obtain optimum results. This is because the discovery of an optimum value of a result effective variable is generally considered to be within the skill of the art. See *In re Boesch* 205 USPQ 215. Applicants' argument with respect to the Weldon et al. and Tan teach solutions to different problems is unpersuasive, because roughening the surface taught by Weldon et al. including treating the surface with acidic solution to remove metallic layer, and cleaning the surface taught by Tan including treating the surface with acidic solution. This is also because HCL is known in the art to remove metallic impurities from a surface of a substrate.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zeinab E. EL-Arini whose telephone number is (571) 272-1301. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Zeinab ELarini
Zeinab E. EL-Arini
Primary Examiner
Art Unit 1746

ZEE
11/01/05